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**COSMIC
PREDICTIONS
SUMMUNNY**

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What changes if spacetime remembers collapse



By Sum Bunny

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5 COSMIC PREDICTIONS

What changes if spacetime remembers collapse?

By Sum Bunny

(Author's Note: This season I came in 6th in my fantasy football league, so take these predictions with a grain of salt.)

Modern cosmology treats spacetime as elastic. It bends. It vibrates. It relaxes. But it does not *remember*.

In my recent work (*Black Hole Speaks*, *The Seven-Hour Sigh*, and the Scalar Knot framework), I have been exploring a different possibility: that extreme gravitational collapse plastically deforms the coupled scalar vacuum, leaving long-lived structural residues even after matter and radiation are gone.

Not information stored as bits. Not data hidden on horizons. But **structure preserved by changing medium**—from matter and fields into geometry itself.

If that is true, it leads to concrete, strange, and testable consequences. Here are five.

1. Gravitational Lensing Without Baryonic Mass

In standard general relativity, light bends because matter curves spacetime. Yet lensing surveys already show a persistent mismatch between where curvature appears and where visible matter resides. The usual answer is dark matter.

The structural alternative is more radical: **some curvature may be the residual geometry of extinct collapse events.**

Not mass in the particle sense. Not fluid. But **Metric Fossils**.

In this view, some gravitational lenses are the negative image left in spacetime after the original star, galaxy, or black hole has vanished. Technically, this does not violate Einstein's equations; the curvature corresponds to the effective stress-energy of a **scalar soliton** or remnant mode.

The Signature: Stable lensing patterns with no evolving luminous counterpart and no corresponding *baryonic* mass concentration. A real structure, made only of shape.

2. Anisotropic “Texture” in Spacetime

If spacetime relaxes perfectly after stress, its residual fluctuations (the background hum of the universe) should be statistically isotropic. But if the vacuum exhibits **hysteresis**—like strained metal or bent crystal—then its fluctuations should carry directional bias.

Not signals. Not waves. **Vacuum Texture.**

In practical terms, this predicts:

- Subtle preferred directions in the stochastic gravitational-wave background.
- Low-frequency metric noise with angular correlations.
- Departures from purely Gaussian, isotropic vacuum statistics.

This is the cosmological equivalent of wood grain: not a pattern you draw, but one revealed when you sand the surface. A memory embedded in the noise floor of reality itself.

3. Weak Large-Scale Correlations in Jet Orientations

Astrophysics currently treats black hole jet direction as a local accident—set by spin, disk turbulence, and recent accretion history.

But if spacetime contains long-lived deformation channels left by ancient collapses, then later black holes do not form in a neutral medium. They form inside a subtly pre-shaped geometry.

The Prediction: We should see weak correlations between jet orientations and large-scale cosmic shear. Crucially, these correlations would be **statistical, not absolute**, and should vanish on scales above the **coherence length** of the scalar field.

Not universal alignment (which would violate relativity). Local inheritance. Structure guiding structure.

4. Scalar-Field Phase Offsets

This is the most direct theoretical consequence of the Scalar Knot framework. If a scalar field participates in supporting massive early objects, it must couple to curvature.

We can define the action for this coupled system as:

$$S = \int d^4x \left[-\frac{1}{2} g_{\mu\nu} \partial_\mu \phi \partial_\nu \phi - V(\phi) - \frac{\xi}{2} R \phi^2 \right]$$

$$[16\pi G R - 21 (\nabla\phi)^2 - V(\phi) - 21 \xi R \phi^2]$$

The non-minimal coupling term ($\xi R \phi^2$) allows extreme curvature (R) to shift the field (ϕ) into metastable phases that persist even after the curvature relaxes.

(Note: Such couplings are tightly constrained by equivalence-principle and Solar System tests unless screened.)

For ultra-light scalars ($m\phi \sim 10^{-22}$ eV), the intrinsic field timescale is short; the cosmic persistence comes instead from metastability and barrier physics (hysteresis), which can lock phase offsets for 10^6 – 10^9 years.

The Signature:

- Identical matter distributions with different effective gravitational constants (Geff).
- Lensing anomalies correlated with *collapse history* rather than present mass.

The vacuum itself becomes a material with memory. Not new particles; new *states* of emptiness.

5. Geometric Structures Without Baryonic Matter

The strongest claim must also be the most careful. General relativity does not permit stable, localized curvature without *any* energy content. But it *does* permit:

- Long-lived metric modes.
- Scalar-field supported curvature (Boson Stars).
- Topological deformation states.

All of which can exist without **baryonic matter**.

The Prediction: There should exist astrophysical structures that behave gravitationally like objects, yet contain no stars, no gas, and no particle population. Not dark matter halos in the usual sense. Not clouds. But **metastable metric configurations**.

Geometric relics. The universe's scar tissue.

What This Would Mean

If even one of these predictions is confirmed in its strong form, several assumptions quietly collapse:

- That gravity always tracks matter.
- That the vacuum is memoryless.
- That collapse is an erasure.

HEY JOSIANE,
I'M GOING TO STOP TYPING AND HAVE DINNER WITH YOU.
SUM BUNNY LOVES YOU!!!



FREE FLASH